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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,676	12/31/2003	Nicole L. Blankenbeckler	HT3975USNA	9721

23906 7590 10/10/2006

E I DU PONT DE NEMOURS AND COMPANY
LEGAL PATENT RECORDS CENTER
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EXAMINER	
THAKUR, VIREN A	

ART UNIT	PAPER NUMBER
1761	

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/749,676	BLANKENBECKLER ET AL.	
	Examiner	Art Unit	
	Viren Thakur	1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *10-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/1/04, 11/5/04, 8/2/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-9, drawn to a method of heating a food product using a coating derived from ink, classified in class 426, subclass 107.

   II. Claims 10-12, drawn to a method of making a liquid coating composition for a microwave susceptor, classified in class 106.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Group II and Group I are directed to related processes. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed can have a materially different function. The invention of Group I is directed to a method of heating a food product using a coating derived from ink that converts microwave energy into heat; while the invention of Group II is directed to a method of making a liquid coating composition for a microwave susceptor. Additionally, although

related, there is no linking claim between the claims of Group II and Group I thus the inventions do not overlap in scope. Furthermore, the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants.

3. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification and require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Andrew Golian on September 12, 2006 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-12 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Oath/Declaration

5. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either an application data sheet or supplemental oath or declaration.

It does not identify the mailing address of each inventor. A mailing address is an address at which an inventor customarily receives his or her mail and may be either a home or business address. The mailing address should include the ZIP Code designation. The mailing address may be provided in an application data sheet or a supplemental oath or declaration. See 37 CFR 1.63(c) and 37 CFR 1.76.

The above-specified information has not been provided in the oath or declaration or in an application data sheet for inventor, Mr. Paul Roger Kust.

Claim Objections

6. Claims 1-9 are objected to because of the following informalities: Claim 1 recites the limitation "optionally" with reference to the inclusion of a chemical dispersion aid. Dependent claims 5 and 6 require the inclusion of the chemical dispersion aid, which is optional in independent claim 1. It is unclear as to how a component that is optional in the independent claim is then required in a further limiting dependent claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. The above specified claims recite the limitation "comprising" in line 6 and recite the limitation "wherein the binder, microwave susceptor material, solvent and chemical dispersing aid total 100 parts by weight" in lines 15-16. The limitation "comprising" indicates that the composition of the ink can contain components other than those disclosed; therefore it is interpreted that only the binder, susceptor material, solvent and chemical dispersing aid total 100 parts by weight and that the composition can be more than 100 parts by weight and does not have to be 100 percent of the composition. Said composition can comprise components other than the binder, susceptor material, dispersion aid and solvent which will total 100 percent.

b. The above specified claim further recites the limitation "optionally" in line 12. It is thus unclear as to how the chemical dispersion aid can be

incorporated into the total 100 parts by weight if it is optional to be included in the ink composition.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 5, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ochocki (U.S. 5,175,031). With regard to instant claim 1, Ochocki discloses a laminate that is provided for microwave heating of packaged products wherein a coating derived from an ink is used to convert microwave energy to heat (Column 2, Line 46-66). The method of heating is inherently incorporated into microwave heating using a substrate coated with microwave susceptor ink. Ochocki further discloses a natural polymer binder (Column 3, Line 58-64), a non-aggregated particulate nonmetallic microwave susceptor material (Column 2, Line 67 to Column 3, Line 11) at between 7 to 20 parts by weight (Column 7, Line 65); 50 to 88 parts by weight of an aqueous solvent (Column 3, Line 65-66; Column 8, Line 4-5); and up to 10 parts by weight of a chemical dispersing aid for the microwave susceptor material (Column 5, Line 24-29). It is further known that emulsifiers

such as polyethylene wax are known for assisting in the dispersion of particulate material. Ochocki further discloses wherein the microwave susceptor should not be agglomerated (Column 4, Line 45-57). With regard to the natural polymer binder, Ochocki further discloses said binder at between 50-80 percent binder and water (Column 7, Line 67) and wherein said solution contains 30 percent binder (Column 4, Line 15-16); therefore Ochocki discloses wherein said formulation comprises 15% binder which is between 5 to 20 parts by weight. With regard to the total parts by weight for the binder, microwave susceptor material, solvent and chemical dispersing aid, Ochocki discloses a formulation that totals 100 percent (Column 7, Line 65 to Column 8, Line 4). Which it is interpreted can include 100 parts by weight of the binder, microwave susceptor material, solvent and chemical dispersing aid. Additionally, for examination purposes it is interpreted that the binder, microwave susceptor material, solvent and chemical dispersing aid can equal 100 parts by weight without being the sole components in the ink composition. Since the above specified components are disclosed by Ochocki as percentage ranges, it is interpreted that the percentage ranges allow for the susceptor, binder, solvent and chemical dispersion aid to total 100 parts by weight. For example, a component can be 10 parts by weight, and comprise only 5 percent of the total composition. If the total formulation is based on 100 part by weight, the percentages disclosed by Ochocki for the components still fall within the disclosed ranges. As recited in instant claim 5, Ochocki discloses a chemical dispersing aid for the particulate microwave

susceptor material (Column 5, Line 24-29); wherein said dispersing aid is a polyethylene wax. As recited in instant claim 7, Ochocki discloses carbon black as the microwave susceptor material (Column 4, Line 28-36). As recited in claim 9, Ochocki discloses wherein said ink has greater than 20 percent by weight solids (Column 7, Line 65-66). The solids disclosed are incorporated in the range of 2-25 percent and 10-15 percent, which is thus greater than 20 percent.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ochocki (U.S. 5,175,031). Ochocki discloses a microwave susceptor ink coating as cited above. Ochocki further discloses wherein the microwave susceptor material is present at between 9 to 13 parts by weight, as cited above.

Ochocki does not disclose wherein said natural polymer binder is present in an amount of 9 to 13 parts by weight; however, as discussed above, Ochocki discloses wherein said binder is at approximately 15 parts by weight, since it is interpreted that only the binder, susceptor, solvent and chemical dispersing aid total 100 parts by weight.

Another example of Ochocki disclose wherein the binder and water solution is between 33.75-47.25 percent (Column 9, Line 48). As cited above, since the binder/water solution is 30 percent binder, this results in the example of Ochocki to have 9 percent binder, which is 9 parts by weight, since it is interpreted that the only the binder, susceptor, solvent and chemical dispersing aid total 100 parts by weight.

It would have been obvious to a person having ordinary skill in the art to incorporate the natural polymer binder at between 9 to 13 parts by weight, as taught by the alternate example of Ochocki for the purpose of requiring a lower amount of the binder to hold the ink together. Such a modification would be necessary if the formulation comprised fewer components. It would have been obvious to one having ordinary skill in the art that the excess binder would be unnecessary and slight modification would be required.

14. Claim 6 is rejected 35 U.S.C. 103(a) as being unpatentable over Ochocki (U.S. 5,175,031) in view of Francis (Wiley Encyclopedia of Food Science and Technology).

Ochocki discloses a microwave susceptor ink comprising a nonmetallic microwave susceptor material, an aqueous solvent, a natural polymer binder and a chemical dispersing aid, as cited above.

Ochocki does not disclose wherein said chemical dispersing aid is polyoxyethylene (20) glycerin monostearate, polyoxyethylene (20) sorbitan monolaurate (Polysorbate 20), polyoxyethylene (20) sorbitan monostearate (Polysorbate 60), or polyoxyethylene (20) sorbitan monooleate (Polysorbate 80).

Francis teaches that Polysorbate 60 is a well known hydrophilic surfactant that is added to compositions, such as cake batters for the purpose of reducing surface tension and thus improving the dispersibility and aeration of the composition (Page 607-608).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Ochocki to use Polysorbate 60 as a dispersion aid, as taught by Francis for the purpose of reducing the surface tension of the binder and thus allowing a more desirable dispersion of the microwave susceptor material within the binder. Although applied to cake batters, Francis is relied on to teach the use of a food grade surfactant,

Polysorbate 60, for improving dispersion and reducing surface tension. The food grade surfactant can similarly be applied to microwave susceptor substrates for the same purpose. Such a modification allows for the ink composition as taught by Ochocki to have the desired rapid heating rate and leveling off temperature for the composition.

15. Claims 2 and 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Ochocki (U.S. 5,175,031) in view of Hemker (U.S. 4,849,233).

Ochocki discloses a microwave susceptor ink comprising a nonmetallic microwave susceptor material, an aqueous solvent, a natural polymer binder and a chemical dispersing aid, as cited above.

Ochocki does not disclose wherein said binder is a water soluble soy protein, vegetable protein or derivative thereof; or corn starch, polysaccharides or derivatives thereof. However, Ochocki teach using a natural polymer binder that is a resin protein (Column 3, Line 58-64; Column 4, Line 8-9).

Hemker discloses a binding system that coats a food product which is subsequently heated in the microwave (Column 3, Line 2), for the purpose of providing a protective coating that enhances the freshness, quality and storage stability, and also for holding together the food product into a desired shape or molded product (Column 3, Line 45-50). Hemker further teaches that it is known to use soy protein (Column 5, Line 54-55) and corn starch (Column 6, Line 22) and derivatives of corn starch (Column 5, Line 56-57) as a natural polymer

binder, for the purposes discussed above. Therefore, regardless of the application, Hemker teaches that these polymers are known to be used for binding systems.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Ochocki to use soy protein or corn starch or a derivative of corn starch as a binder, for the purpose of providing a binding system for holding together the microwave susceptor composition into a desired shape or molded product and further providing stability to the composition. Such a modification allows for the preservation of the ability of the microwave susceptor material to convert microwave energy into heat so that it can be used for more than just a one-time use.

16. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ochocki (U.S. 5,175,031) in view of Ryan et al. (U.S. 6,617,557).

Ochocki discloses as cited above.

Ochocki does not disclose wherein said natural polymer binder is a water soluble cellulosic derivative.

Ryan et al. teach the binding of two or more substrate layers thought the use of a susceptor composition, wherein said susceptor composition comprises a a susceptor material (Column 3, Line 48-55) in combination with adhesives tackifiers, plasticizers, fillers, and stabilizers (Column 8, Line 50-59). Ryan et al.

further disclose wherein said adhesive is a cellulosic derivative such as hydroxypropyl cellulose (Column 20, Line 10-12).

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Ochocki to use a natural polymer binder that is a cellulosic derivative, as taught by Ryan et al. for the purpose of incorporating another type of known natural polymer binder for the susceptor ink composition. Ryan et al. further teach that it is known to use natural polymer adhesives that contain cellulose for the purpose of adhesion; therefore, it would be obvious to substitute one natural polymer binder for another since cellulose adhesive compositions aid in enhancing the adhesion properties of the susceptor composition (Column 19, Line 44-48).

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. 2,582,174 teaches a method of heating a food product using microwave energy whereby the outside of the food is coated with a substance that absorbs microwave energy and converts it to heat. U.S. 5,565,125 discloses a microwave interactive susceptor ink composition and use of said composition using non-metallic microwave susceptors such as carbon black, that is capable of controlled heating so as to prevent charring of the substrate, hot spots, and runaway heating. It is further disclosed to develop a

printed microwave susceptor that prevents contamination of the food being heated from the susceptor layer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viren Thakur whose telephone number is (571)-272-6694. The examiner can normally be reached on Monday through Friday from 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Viren Thakur
Examiner
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